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June 30, 2008

BY E-FILING

The Honorable Gregory M. Sleet
United States District Court
Federal Building
844 North King Street
Wilmington, DE 19801

Re: *Linear Technology Corp. v. Monolithic Power Systems, Inc.*
C.A. No. 06-476 (GMS)

Dear Chief Judge Sleet:

Now that Defendant Monolithic Power Systems, Inc. ("Monolithic") has rested, Plaintiff Linear Technology Corporation ("Linear") submits this letter brief in support of its motion pursuant to Fed. R. Civ. P. 50(a)(2) for judgment as a matter of law that the asserted claims are not invalid for anticipation.

Monolithic has attempted to show anticipation by arguing that the accused MP1543 practices the prior art. In particular, Monolithic presented evidence that the MP1543 has the same pulse skipping mode purportedly disclosed in the Unitrode reference (DX-116), and as a result, Monolithic contends that if the asserted claims cover the MP1543, then the Unitrode reference anticipates those claims. The full extent of Monolithic's evidence on this point is contained in the seven pages of testimony attached hereto as Exhibit A. (Direct Testimony of Dr. Thomas Szepesi, Tr. at 752:24-759:19). This evidence is insufficient as a matter of law because Monolithic did not present evidence that the Unitrode reference meets each limitation of any of the asserted claims.¹

¹ Dr. Szepesi's cross-examination regarding the Unitrode reference is found at 807:1-821:3. See Exhibit B. Regardless of Dr. Szepesi's recollection on whether or not he identified each limitation of any of the asserted claims in the Unitrode reference, Dr. Szepesi in fact did not provide any evidence that *each* (let alone all) of the limitations of

(Continued . . .)

The Honorable Gregory M. Sleet
June 30, 2008
Page 2

The Federal Circuit has squarely rejected the theory that an alleged infringer can prove anticipation by showing that it practices the prior art. *Zenith Elecs. Corp. v. PDI Commun. Sys.*, 522 F.3d 1348, 1363 (Fed. Cir. 2008) (“*Zenith*”) (“anticipation cannot be proved by merely establishing that one ‘practices the prior art’”) (Exhibit C). In *Zenith*, as here, the defendant did not provide evidence that the prior art reference satisfied each of the limitations of the claim-at-issue. “Instead, with respect to those limitations, [the defendant] merely argued that ‘to the extent the [allegedly infringing device] is considered to practice them, then so did the [prior art reference].’” *Id.* Based on this record, the Court found that, as a matter of law, the defendant failed to establish anticipation:

[M]ere proof that the prior art is identical, in all material respects, to an allegedly infringing product **cannot** constitute clear and convincing evidence of invalidity. Anticipation requires a showing that each element of the claim at issue, properly construed, is found in a single prior art reference. ‘It is the presence of the prior art and its relationship to the claim language that matters for invalidity.’ Here, there has been no such showing.

Id. (emphasis added) (citation omitted).

Accordingly, Monolithic’s anticipation defense also fails as a matter of law. Under *Zenith*, Monolithic’s evidence that the Unitrode reference allegedly has the same pulse skipping mode as the MP1543 cannot constitute clear and convincing evidence of invalidity. As such, Linear should be granted judgment as a matter of law that the asserted claims are not invalid for anticipation.

Respectfully,

/s/ Karen Jacobs Louden

Karen Jacobs Louden (#2881)

Enclosures

cc: Clerk of the Court (by hand delivery w/enc.)
Richard J. Horwitz, Esq. (by e-mail and hand delivery w/enc.)
Dean G. Dunlavey, Esq. (by e-mail w/enc.)
Joel M. Freed, Esq. (by e-mail w/enc.)

(. . . continued)

any asserted claim (let alone each asserted claim) is found in the Unitrode reference, either during his direct examination or his cross-examination.

EXHIBIT A

IN THE UNITED STATES DISTRICT COURT
IN AND FOR THE DISTRICT OF DELAWARE

- - -

LINEAR TECHNOLOGY CORPORATION, : Civil Action
:
Plaintiff, :
:
v. :
:
MONOLITHIC POWER SYSTEMS, :
INC., :
:
Defendant. : No. 06-476-GMS

- - -

Wilmington, Delaware
Thursday, June 26, 2008
8:30 a.m.
FOURTH DAY OF TRIAL

- - -

BEFORE: HONORABLE GREGORY M. SLEET, Chief Judge

APPEARANCES:

KAREN JACOBS LOUDEN, ESQ., and
JAMES WALTER PARRETT, JR., ESQ.
Morris, Nichols, Arsht & Tunnell
-and-
JOEL M. FREED, ESQ.,
JIMMY SHIN, ESQ.
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RONALD PABIS, ESQ.
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(Washington, D.C.)
-and-
MARK D. ROWLAND, ESQ.
Ropes & Gray
(Silicon Valley, CA)

Counsel for Plaintiff

Szepesi - direct

1 A. That's Figure 12.

2 Q. And have you applied the claim construction and the
3 claims to every single one of the asserted claims and
4 analyzed whether each one is obvious?

5 A. I did.

6 Q. All right. And you have concluded that all are
7 obvious?

8 A. I concluded that all the asserted claims are made
9 obvious by this combination of Figure 12 of AN29 and the
10 synchronous rectifier.

11 Q. Other than the error amplifier, just for the record,
12 I think you said this, but is the other difference from the
13 AN35, the Application Note 35, which was Defense Exhibit 91,
14 the other difference the chip that was used in this?

15 A. Because it's a boost regulator, it's using a boost
16 regulator controller chip which is the LT1070. The previous
17 was a buck and it used LT1074. Two different integrated
18 circuits.

19 Q. Other than that, the control methods and the
20 circuitry are the same?

21 A. It's the same.

22 Q. All right. I'd like to turn your attention to
23 Defense Exhibit 16 which would be in your binder.

24 MR. HUANG: And if we could have slide 69,
25 please.

Szepesi - direct

1 BY MR. HUANG:

2 Q. Can you tell us what that document is?

3 A. This is -- this shows the title page of the book
4 which was published by Unitrode Corporation. This is an
5 integrated circuit manufacturer competitor for Linear
6 Technology.

7 Q. And if you turn to the second, the third page of
8 Exhibit 116? It looks like it's part of this book that you
9 have identified. Can you tell us what is actually contained
10 in Exhibit 116? What document it is?

11 A. I'm not sure what you are asking.

12 Q. Can you describe for us what Exhibit 116 is?

13 A. It's a book, yes.

14 Q. Is it part of a book?

15 A. This -- these couple of pages are parts of a book,
16 yes.

17 Q. And what do these parts of the book describe?

18 A. This part of the book describes an integrated circuit
19 which is a PWM controller. The part number is UC3825 or
20 2825 or 1825, and are different versions of the same
21 circuit.

22 Q. And which was Defense Exhibit 116 publishes?

23 A. In 1990. On the second page, it says copyright 1990
24 by Unitrode Integrated Circuits Corporation.

25 Q. Did you draw any conclusions with respect to the

Szepesi - direct

1 asserted claims of the patents, both asserted patents based
2 on this Unitrode document shown in Exhibit 116?

3 A. Well, my conclusion was that if a pulse-skipping mode
4 controller is indeed covered by the asserted claims of the
5 patent as Linear contends, then this particular prior art
6 would anticipate and invalidate these claims because this is
7 a pulse skipping type of controller.

8 Q. And briefly describe what pulse skipping is.

9 A. Pulse skipping is a different control method. You
10 know, it talks about different control methods such as
11 discontinuous control methods like PWM, et cetera. Then we
12 talked about burst mode which is used at low load current.
13 Pulse skipping is another control method which is used at
14 low load current.

15 Q. Now, how does this document relate to the validity of
16 the asserted claims?

17 A. It relates to the asserted claims in the sense that
18 the accused product, the MP1543 practices pulse-skipping
19 mode control, and Linear contends pulse-skipping mode
20 control violates the patent. So if there is another pulse
21 skipping controller which is prior art which operates in
22 similar fashion as the accused fashion, then that must
23 correspond to the claims, must be anticipatory prior art.

24 MR. HUANG: If we can go to Slide 71.

25 BY MR. HUANG:

Szepesi - direct

1 Q. Now, you heard the term UC3825?

2 A. Yes.

3 Q. All right. What does that refer to?

4 A. This is the patent number. This is the number of the
5 integrated circuit.

6 Q. Is that described in Defense Exhibit 16?

7 A. This is one of the things which are described, yes.

8 Q. And what do you conclude with respect to Unitrode
9 UC3825 and Defense Exhibit 16 with respect to the asserted
10 claims?

11 A. Well, I concluded that they both practice
12 pulse-skipping mode control. And pulse-skipping mode
13 control is applied at very light load currents when the
14 controller actually is skipping pulses, which means it's not
15 turning on. The clock says the guy to turn on, and he says
16 uh-uh, the water is about right. I'm not going to turn on.
17 And both the 1543 and this Unitrode UC3825 does that.

18 Q. Now, is that different from what you described before
19 as burst mode?

20 A. It is significantly different, yes.

21 Q. Looking at Slide 71. What are you showing here?

22 I'll just note for the record that Slide 71
23 indicates what looks like a figure from DX-181 which is the
24 MP1543 datasheet, and the bottom is a figure from DX-116 on
25 page 4-120 of DX-116.

Szepesi - direct

1 Can you explain for the jury what you are
2 showing in this diagram?

3 A. Well, what I am showing here, the bottom part is the
4 block diagram, which is, which shows how this prior art
5 circuit works. And it is traditional controller with a
6 twist, with a slight change.

7 This is the PWM comparator, which every PWM
8 controller has. One end goes to a ramp signal which is a
9 timing signal, which is a triangle signal. And the other is
10 coming from the error amplifier which is going to control.
11 And the PWM signal, PWM comparator compares the two signals
12 and creates a control signal which controls the duty cycle
13 and that is the way it regulates.

14 The slight twist is two things. One is that
15 they add what they call a output voltage to the ramp signal
16 and the output voltage make sure when the current is very
17 low and the error amplifier is asking the pulse comparator
18 to create very, very short pulse, okay? Then, there is a
19 minimum pulse. It's called minimum time which this
20 controller can create because once you turn on the switch
21 and you want to turn it off, the signal has to travel
22 through the amplifier signal ramp compared to the logic to
23 reach the switch again to turn it off. So you cannot
24 instantaneously turn it off. If you want very, very narrow
25 duty cycle, which means very, very short on-time for the

Szepesi - direct

1 main switch, there is a limit. You cannot go below a
2 certain limit. Okay?

3 And if the load is so low that duty cycle is too
4 much, then what the controller does, it just stops, keeps
5 cycling. It says, okay, you know, this is too much. You
6 just, you just wait for awhile. You just have to idle. And
7 the way it does it, it's the error amplifier is designed to
8 be capable to be lower than this voltage. So when the load
9 is very light, then the error amplifier is capable of
10 pulling it's input, pulling it out below this voltage, which
11 means that this comparator is always at the high logic
12 level. And if it's a high logic level, it will prevent this
13 from turning on the switch. And as long as it stays high,
14 then the clock is coming. The clock is trying to turn it
15 on. The clock is trying to turn it on every cycle. This is
16 the clock. But as long as the PWM is staying high, it
17 cannot turn it on. It's skipping cycles. Okay?

18 And the reason I showed this to you, because it
19 is exactly the same structure, what the MP1543 is. And the
20 reason why -- and that most of it is shown here, the error
21 amplifier, the PWM comparator, the ramp generator. The
22 PWM -- the flip-flop, the latch is inside this circuit. And
23 both of them has common features that they have an offset
24 and this offset makes it possible for the error amplifier to
25 shutdown the switching through the PWM comparator. That is

Szepesi - direct

1 the commonality.

2 Q. Dr. Szepesi, what you have shown here is sort of
3 colored circles that match up the different parts of the
4 structure in the UC3825 with the structures shown on the
5 datasheet for the 1543. Is that right?

6 A. That is correct.

7 Q. Now, you mentioned something about duty cycle and
8 then something that couldn't get small enough. Could you
9 explain that by explaining it using the animation example
10 that you had before?

11 A. Sure. So when the switch controller turns on the
12 upper switch to fill up the bucket, and he sees the water is
13 a little bit too high, then he wants to turn it off. And,
14 you know, as you do this or you do with the ramp switch, you
15 cannot turn it off very quickly. You can turn it off
16 quickly, but not -- it's on for awhile. Okay? A very short
17 while. And if that duty cycle which corresponds to that is
18 too much to balance the output current, then the output
19 level in the bucket of the voltage is going to rise. And if
20 you don't do something, it's going to rise out of
21 regulation and you don't have a regulator anymore because it
22 will keep rising and rising and the water is going to
23 overflow.

24 So that's when pulse skipping comes into play.

25 When the error amplifier sees it's too high, because the way

Szepesi - direct

1 it's constructed, there is no excess circuitry. The way the
2 circuit is constructed, the way what the patent called the
3 second circuit which controls the duty cycle is constructed,
4 it's capable of stopping the switching. So what is the
5 difference here is in these pulse skipping circuits, there
6 is no second guy with a stop and go. That is very
7 characteristics to personal control. Pulse skipping doesn't
8 need that. There is no other guy. Just the guy who is
9 turning the switches. If he sees that he cannot turn it off
10 fast enough, he say, okay, so I turn it off a couple times
11 now. I have to wait because the water is a little bit too
12 high. Okay? And water level is not going up and down with
13 the wide range. It will stay regulated, okay? So it has
14 one control element or two control elements with personal
15 control.

16 Q. So when you say the water level stays roughly the
17 same, you are referring to the water level in the big bucket
18 at the end, right?

19 A. Yes. That is the output voltage, if you want. Yes.

20 Q. Now, were you also asked to look at whether or not
21 the MPS MP1543 is covered by the claims asserted by the
22 claims asserted by the patents?

23 A. I was asked to look at that, yes.

24 Q. What did you conclude?

25 A. I concluded that it is not covered.

EXHIBIT B

1 IN THE UNITED STATES DISTRICT COURT

2 IN AND FOR THE DISTRICT OF DELAWARE

3 - - -

4 LINEAR TECHNOLOGY CORPORATION, : Civil Action

5 Plaintiff, :

6 v. :

7 MONOLITHIC POWER SYSTEMS, :
8 INC., :

9 Defendant. :

No. 06-476-GMS

- - -

10 Wilmington, Delaware
11 Thursday, June 26, 2008
12 8:30 a.m.

FOURTH DAY OF TRIAL

- - -

13 BEFORE: HONORABLE GREGORY M. SLEET, Chief Judge

14 APPEARANCES:

15 KAREN JACOBS LOUDEN, ESQ., and
16 JAMES WALTER PARRETT, JR., ESQ.
Morris, Nichols, Arsht & Tunnell

-and-

17 JOEL M. FREED, ESQ.,
18 JIMMY SHIN, ESQ.
MATTHEW C. CUNNINGHAM, ESQ.
McDermott Will & Emery LLP
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22 MARK D. ROWLAND, ESQ.
Ropes & Gray
23 (Silicon Valley, CA)

24 Counsel for Plaintiff

25

Szepesi - cross

1 Q. Do you know of any pulse-skipping mode prior art that
2 involved synchronously switched switching transistors?

3 A. I'm aware of many of them.

4 Q. Many of them. Did you identify any of them here
5 today?

6 A. Yes, I did.

7 Q. Which ones?

8 A. The UC3825.

9 Q. That is only one you identified here today?

10 A. Yes, but I know more.

11 Q. But the only one you have identified in this
12 proceeding is that one. Correct?

13 A. Another one was identified three day ago here.

14 Q. In this courtroom, the only one you have identified
15 is the one you mentioned?

16 A. That's correct.

17 Q. And you are not relying on that for obviousness, you
18 are relying on that for something called anticipation.
19 Correct?

20 A. That is correct.

21 Q. And is it correct that in order for a reference to be
22 in anticipation of a patent claim, it has to satisfy every
23 single element, top to bottom of the patent claim, by itself
24 without any outside other references?

25 A. That is correct.

Szepesi - cross

1 Q. So one of them that it has to satisfy is that there
2 have to be synchronously switched switching transistors;
3 correct?

4 A. That is correct.

5 Q. Now, you mentioned this Unitrode, but sometimes you
6 called it the 1825, and sometimes I think you called it the
7 3825. Are they the same thing?

8 MR. HUANG: Objection. I don't think he ever
9 testified about the 1825.

10 THE COURT: I think that is correct, Mr. Freed.

11 MR. FREED: I think the slides had 1825 on them.
12 I may be wrong.

13 THE COURT: You may be right. I'm not --

14 THE WITNESS: Let me comment.

15 THE COURT: Go ahead, doctor.

16 THE WITNESS: If I can clarify that.

17 In the industry, there is a normal standard
18 of notation and most chips were released in different
19 temperatures versions and the widest which is the industrial
20 range is 1825. The 2825 is a narrower range, and the 3825
21 only works on zero degree Celsius to seven. So it's all
22 same circuits. They test in different ways.

23 Q. I understand. The numbers don't mean anything,
24 they're all the same circuit, they're just rated over a
25 different range?

Szepesi - cross

1 A. Yes. So I may have misstated but it's the same
2 circuit.

3 Q. That is all I was asking. Thank you.

4 Now, isn't it a fact that the 1825 is a PWM
5 controller designed to control push-pull switching
6 regulators or non-switching regulators, not synchronously
7 switched regulators?

8 A. It is correct to say that it is designed to control
9 push-pull switching regulators, but those switches in the
10 push-pull switching regulators based on the claim
11 construction of this Court meets the requirements of the
12 synchronously switched regulators.

13 Q. Let me ask it again so we're clear. Isn't it a fact
14 that the PWM controller 1825 -- excuse me -- that the UC1825
15 was a PWM controller designed to control push-pull switching
16 regulators or non-switching regulators, not synchronously
17 switched regulators?

18 A. It depends on what your definition is of a
19 synchronously switched regulator is.

20 Q. Isn't a fact that you have said that the 1825 is a
21 PWM controller designed to control push-pull switching
22 regulators or non-switching regulators, not synchronously
23 switched regulators?

24 A. Again, it depends on what you mean on the
25 synchronously switched. If you use the claim construction,

Szepesi - cross

1 then the claim construction, what it means on the
2 synchronously switched includes these push-pull switches,
3 what this controller designed to control.

4 Q. I'm not asking whether it depends on what it means.
5 I'm asking whether you have ever said that.

6 A. I may have said that. I probably said that before
7 the claim construction, if I said that.

8 Q. You know you did say that. Right?

9 A. Probably before the claim construction or there was
10 issue.

11 Q. So prior to the issuance of the claim construction,
12 you said that the 1825 was a PWM controller designed to
13 control push-pull switching regulators or non-switching
14 regulator, not synchronously switched regulators. Correct?

15 A. I may have said that.

16 Q. Now, in the Unitrode, which you say is an
17 anticipation -- let me withdraw that and start again. You
18 know what teeter-totters are, don't you?

19 A. Say that again.

20 Q. You know what teeter-totters are, don't you?

21 A. Say it again.

22 Q. You know what teeter-totters are, right, that you see
23 in the playground? Seesaws?

24 A. I didn't know it was called teeter-totters but I know
25 it.

Szepesi - cross

1 Q. Well, teeter-totters, seesaws, we're both talking
2 about the same thing. If you put one person on one side and
3 one person on the other side, when one goes down the other
4 one goes up. Right?

5 A. Right.

6 Q. And vice-versa?

7 A. That's correct.

8 Q. Now, in the switching of the Unitrode, that is not
9 true of the switches. It's not true that when one goes
10 down, the other one goes up?

11 A. That's correct. It's not true.

12 Q. In the patent, it is true that when one switch goes
13 down or off, the other one comes on. Right? Except in the
14 modes where we've got them both sleeping?

15 MR. HUANG: Your Honor?

16 THE COURT: Yes.

17 MR. HUANG: Objection, I think.

18 THE COURT: What is the basis?

19 MR. HUANG: The claim construction. Can we have
20 a sidebar?

21 THE COURT: No. Go ahead.

22 THE WITNESS: Could you repeat the question? I
23 was distracted.

24 BY MR. FREED:

25 Q. In the switches of the patents, the Linear's patents,

Szepesi - cross

1 except when the switches are asleep, when one switch goes
2 down, off, the other one comes on, up and vice-versa.
3 Right?

4 A. It depends on whether you talk about the claims or
5 whether you talk about the embodiments. Those are two
6 different things.

7 Q. I'm talking about what is shown in the patents. That
8 is true of the switches shown on the patents. Correct?

9 A. In the patent, there are different things. There
10 are, there is a specification which includes embodiments and
11 there are the claims. Those are two different things. So
12 my answer to your question is the embodiments shows
13 switches, what they describe. The claims are written
14 broader and, based on the claim construction, allow
15 different kind of switches. And I think that's okay.

16 Q. During the first state of circuit operation, one
17 switch goes on and the other one comes off. Right?

18 THE COURT: Let's see counsel at sidebar.

19 Just a second, doctor.

20 (The following took place at sidebar.)

21 THE COURT: Go ahead, counsel.

22 MR. HUANG: Your Honor, I think during the claim
23 construction, you made it very clear that during the first
24 state of operation, and the synchronously switched
25 transistors when they're operating that it's out of phase.

Szepesi - cross

1 That is all you said and you declined, I think -- I don't
2 know if that has notes on it, the exact page.

3 (Reviewing document.)

4 MR. HUANG: So here. Actually, it starts on the
5 previous page. I'm sorry. The footnote runs on the other
6 page.

7 THE COURT: We're at Page 5 of the order.

8 MR. HUANG: Yes. Do we have a clean copy of the
9 order? Thanks. So Page 5 of the order, if you look at Item
10 5.

11 MR. DUNLAVEY: Let him page down.

12 MR. HUANG: I'm sorry, Your Honor.

13 THE COURT: That's okay. We're looking at the
14 footnote.

15 MR. HUANG: Actually, this and the footnote.

16 THE COURT: Okay. Paragraph 5 and the footnote.

17 MR. HUANG: Yes.

18 (Pause.)

19 THE COURT: Go ahead.

20 MR. HUANG: All right. The only thing we want
21 to point out is that in your order, what you construed as
22 synchronously switched transistors were switches that were
23 driven out of phase and not only on and off. What he is
24 trying to do is claim the claim construction to say during
25 the first state of operation it must only be on and off.

Szepesi - cross

1 And I think in the footnote, what you did was you said there
2 was a disagreement but that you weren't going to construe
3 this claim further, "out of phase." Now what they're trying
4 to do is go against that, and that is the same thing. You
5 didn't construe the two states and I think if we're going to
6 be held to the same standard, which is appropriate, they
7 should be held to the same standard.

8 THE COURT: Mr. Freed.

9 MR. FREED: I would like the Court to read what
10 he construed as the first state of circuit operation.

11 (Court reviews document.)

12 THE COURT: Look at Paragraph 8, Mr. Huang.

13 MR. HUANG: All right.

14 I thought he was talking about synchronously
15 switched switching transistors. I'll withdraw my objection.

16 (Sidebar conference ends.)

17 BY MR. FREED:

18 Q. Let me put a new question to you. You said you took
19 into account the Court's construction. Right?

20 A. I did.

21 Q. Can we get the Court's construction up?

22 Particularly, Paragraph 8, where the term first state of
23 circuit operation is construed.

24 The term first state of circuit operation is
25 construed to mean a state in which the switching transistors

Szepesi - cross

1 are both enabled for switching and are synchronously
2 switched such that one transistor is on and the other is
3 off, with a varying duty cycle to maintain a regulated
4 voltage at the output terminal?

5 A. Precisely.

6 Q. Now, in the Unitrode 1825, and its other numbers,
7 it's not a time during the first state of circuit operation
8 that one is on and the other is off, and they get
9 synchronously switched?

10 A. I don't understand the question. In the Unitrode, it
11 operates, it always means one is on, the other is off. If
12 you mean the two cannot be off at the same time, it doesn't
13 mean that. This construction does not say that it cannot be
14 happening.

15 Q. Let me ask you this: Does the Unitrode have two
16 asynchronous switches?

17 A. I don't understand the question.

18 Q. Does the Unitrode have one switch-diode combination
19 and a second switch-diode combination?

20 A. You might look at it that way.

21 Q. So when the first switch-diode combination is on,
22 after it turns off, does the other one come right on?

23 A. No. It waits a while and comes on. But this claim
24 construction doesn't exclude that. It just says when one is
25 on the other is off. It doesn't say that when one is off

Szepesi - cross

1 the other has to be off. You can't turn it around.

2 Q. Can't turn it around?

3 A. You cannot, because what it says, the two cannot be
4 on at the same time. It doesn't say the two cannot be off
5 at the same time.

6 Q. So we have established factually the two are off at
7 the same time?

8 A. In the Unitrode combination, there are periods when
9 the two are not on, none of them are on. But I believe that
10 it is totally congruent, a totally correct response with the
11 Judge's claim construction.

12 Q. Let me ask you this: There is a time when they are
13 both off at the same time. Correct?

14 A. I never said no.

15 Q. Now, can we go back to the term synchronously
16 switched, No. 5. A pair of synchronously switched switching
17 transistors is construed to mean a pair of switching
18 transistors are synchronously switched when they are driven
19 out of phase to supply current at a regulated voltage to a
20 load?

21 A. That's correct.

22 Q. So they have to be driven. Right?

23 A. They have to be driven.

24 Q. Driven out of phase?

25 A. Driven out of phase.

Szepesi - cross

1 Q. When the first of the switch-diode combinations, when
2 the switch goes off, and we are waiting for the second
3 switch to turn on, i.e., during the time when they are both
4 off, is the second switch driven at all?

5 A. It is driven out of phase. Out of phase doesn't mean
6 that -- it is driven. It is driven off, yes.

7 Q. It is driven off?

8 A. Yes.

9 Q. What's driving it off?

10 A. The gate driver.

11 Q. Which gate driver?

12 A. Could you put up the block diagram of the 1825. I
13 will show you.

14 Q. Are the pair being driven off and on?

15 A. Yes, they are. The two transistors driven by the
16 controller, they are being driven on and off by the
17 controller, U67825.

18 Q. Is there current being supplied at the time that they
19 are both off?

20 A. Oh, yes.

21 Q. From where?

22 A. From the inductor.

23 Q. But it's not being supplied through the transistors.
24 Correct?

25 A. It doesn't require. It says, current supplied to the

Szepesi - cross

1 load, and it does.

2 Q. They are driven out of phase to cause the supply of
3 current to the load?

4 A. Well, supply, the load current is supplied by the
5 whole circuit, not by the switches.

6 Q. But it's not being supplied by the power supply at
7 that point in time, is it?

8 A. Absolutely, it's supplied by the power apply.

9 Q. By the inductor, you said?

10 A. The inductor current is flowing. If both transistors
11 are off, the inductor current is flowing, it continues.

12 Q. Nothing is coming through the switches. You will
13 agree with that. Right?

14 A. Yes, I agree. But it is not required that anything
15 come through the switches.

16 Q. I understand what you are saying.

17 Would you agree with me that prior to this case,
18 and even, actually, prior to what you say is the Judge's
19 claim construction, that no one ever called what's in the
20 Unitrode a pair of synchronously switched switching
21 transistors?

22 A. I agree with you.

23 Q. And do you know anybody today that has ever called
24 what's in the Unitrode a pair of synchronously switched
25 switching transistors?

Szepesi - cross

1 A. Well, I know myself. So, yes.

2 Q. And you believe that it was the Judge who caused you
3 to do that. Right?

4 A. No. I read the -- synchronously switched was not
5 clearly defined. Okay? And the Judge clarified what it
6 means. And based on that, I concluded that these
7 transistors are synchronously switched. It's that simple.

8 Q. Let me ask it this way: Prior to that claim
9 construction, neither you nor anyone else called what was in
10 the Unitrode a pair of synchronously switched switching
11 transistors?

12 A. I don't know, but I didn't.

13 Q. And you know of no one else who did?

14 A. No.

15 Q. And you are saying now that after the claim
16 construction, all of a sudden you believe what was never
17 called by you or anyone else that you know of a pair of
18 synchronously switched switching transistors should now be
19 called a pair of synchronously switched switching
20 transistors. That's your testimony. Correct?

21 A. I am not sure what significance, who calls what.

22 Q. I am not asking what the significance is, sir. I am
23 asking you whether it is a fact, that because of that fact,
24 because of the claim construction, now all of a sudden you
25 believe that it's fair to call something that was never

Szepesi - cross

1 called before a pair of synchronously switched switching
2 transistors, it's now fair to call them that because of a
3 claim construction that happened in this case?

4 A. I believe that the Judge's claim construction calls
5 it synchronously switched, then as far as this trial is
6 concerned, it's synchronously switched. That's what I
7 believe.

8 Q. And you believe one skilled in the art, knowing that
9 this case is about synchronously switched switching
10 transistors, would say that this Judge construed the
11 language of the claim in such a way that we will now
12 henceforth call something that was never called a
13 synchronously switched switching transistor a synchronously
14 switched switching transistor?

15 MR. HUANG: Objection.

16 THE COURT: Sustained.

17 BY MR. FREED:

18 Q. In your direct testimony -- well, in your report --
19 withdraw that.

20 In your direct testimony, did you go through
21 every element of any claim and find everything that's in the
22 claim and show where it is in the Unitrode?

23 A. Yes, I did.

24 Q. Which claim did you do that with?

25 A. All the claims.

Szepesi - cross

1 Q. You went through every single claim and found every
2 single element in the claim in the Unitrode?

3 A. That's my recollection. I may not have done that.

4 THE COURT: This would be a good time for our
5 lunch break.

6 (Jury leaves courtroom at 1:00 p.m.)

7 (The following took place at sidebar.)

8 THE COURT: I think Mr. Huang was going to have
9 a heart attack briefly there for a second. Is that a fair
10 question? Do you really feel that is a fair question?
11 Every claim? Every claim. He went through every claim.
12 Come on. How long have you been doing patent work?

13 MR. FREED: 40 years.

14 THE COURT: 40 years. You clerked on the
15 Federal Circuit.

16 MR. FREED: That was my daughter, Your Honor.

17 THE COURT: Come on, Mr. Freed.

18 Do you want to say anything on this?

19 MR. HUANG: Your Honor, I think Dr. Szepesi
20 might have been a little confused when he answered that last
21 question.

22 THE COURT: I wouldn't be surprised if the jury
23 wasn't a little confused.

24 MR. HUANG: I think it is a little unfair to go
25 in and suggest, with all the stuff that has been going on,

EXHIBIT C

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(Cite as: 522 F.3d 1348)

H

Zenith Electronics Corp. v. PDI Communication
Systems, Inc.
C.A.Fed. (Ill.),2008.

United States Court of Appeals,Federal Circuit.
ZENITH ELECTRONICS CORPORATION,
Plaintiff-Appellant,

v.

PDI COMMUNICATION SYSTEMS, INC., De-
fendant-Cross Appellant.
Nos. 2007-1288, 2007-1321.

April 16, 2008.

Background: Patentee sued competitor, which manufactured televisions for healthcare industry, for alleged infringement of patent for digital pillow speakers used to operate televisions in hospital rooms and of patent directed at making hospital-room televisions compatible with both digital and analog pillow speakers. Competitor asserted counterclaims for declaration that patents were invalid due to anticipation, unenforceable due to inequitable conduct, and not infringed. The United States District Court for the Northern District of Illinois, [William T. Hart](#), Senior District Judge, granted summary judgment in competitor's favor and dismissed counterclaims. Parties cross-appealed.

Holdings: The Court of Appeals, [Schall](#), Circuit Judge, held that:

- (1) use of television in combination with digital pillow speaker anticipated “operating power” limitation in patent claim for pillow speaker;
- (2) combination of television and digital pillow speaker were publicly used together prior to pillow speaker patent's critical date for anticipation purposes;
- (3) public use of television and digital pillow speaker in combination anticipated each limitation of pillow speaker patent;
- (4) implied license extended to use of pillow speakers in combination with any compatible television;

(5) competitor did not establish invalidity of television patent based anticipation; and

(6) rulings of invalidity and noninfringement as to patent for digital pillow speakers did not render inequitable conduct counterclaim moot.

Affirmed in part, vacated in part, and remanded.

West Headnotes

[1] Patents 291 ⚙️66(1.14)

291 Patents

291II Patentability

291II(D) Anticipation

291k63 Prior Patents

291k66 Operation and Effect

291k66(1.14) k. Electricity, Electronics, and Radio. [Most Cited Cases](#)

Prior use of television in combination with digital pillow speaker anticipated “operating power” limitation of claim in patent for digital pillow speakers used to operate televisions in hospital rooms, which required that integrated circuit within pillow speaker receive “operating power” from television receiver, given that television receiver in combination was only source of power for pillow speaker, even though capacitor was required to accumulate sufficient charge, and that patent limitation did not depart from ordinary meaning of term “operating power” to require that operating power come directly from television or in full and continuous strength from television. [35 U.S.C.A. § 102\(b\)](#).

[2] Patents 291 ⚙️75

291 Patents

291II Patentability

291II(E) Prior Public Use or Sale

291k75 k. What Constitutes Public Use.

[Most Cited Cases](#)

Determining whether a patent claim is invalid for prior public use requires comparing the claim to the alleged public use. [35 U.S.C.A. § 102\(b\)](#).

[3] Patents 291 ↪ 72(1)

291 Patents

291II Patentability

291II(D) Anticipation

291k72 Identity of Invention

291k72(1) k. In General. [Most Cited](#)

[Cases](#)

Statute may bar patentability by anticipation if the device used in public includes every limitation of the later claimed invention. [35 U.S.C.A. § 102\(b\)](#).

[4] Patents 291 ↪ 75

291 Patents

291II Patentability

291II(E) Prior Public Use or Sale

291k75 k. What Constitutes Public Use.

[Most Cited Cases](#)

For patent claim to be invalid for prior public use, public use itself need not be enabling; rather, court must simply determine whether the public use related to a device that embodied the invention. [35 U.S.C.A. § 102\(b\)](#).

[5] Patents 291 ↪ 314(5)

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k314 Hearing

291k314(5) k. Questions of Law or

Fact. [Most Cited Cases](#)

Invalidity of patent for anticipation is a question of fact. [35 U.S.C.A. § 102\(b\)](#).

[6] Patents 291 ↪ 323.2(2)

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k323 Final Judgment or Decree

291k323.2 Summary Judgment

291k323.2(2) k. Presence or Absence of Fact Issues. [Most Cited Cases](#)

Whether patent is invalid for anticipation may be resolved on summary judgment if there is no genu-

ine issue of material fact. [35 U.S.C.A. § 102\(b\)](#).

[7] Patents 291 ↪ 323.2(2)

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k323 Final Judgment or Decree

291k323.2 Summary Judgment

291k323.2(2) k. Presence or Absence of Fact Issues. [Most Cited Cases](#)

Patents 291 ↪ 324.5

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k324 Appeal

291k324.5 k. Scope and Extent of Review in General. [Most Cited Cases](#)

In reviewing summary judgment of invalidity of patent for anticipation, Court of Appeals determines de novo whether the evidence in the record raises a genuine issue of material fact, and summary judgment is proper if no reasonable jury could find that the patent is not anticipated.

[8] Patents 291 ↪ 62(2)

291 Patents

291II Patentability

291II(D) Anticipation

291k57 Evidence of Prior Knowledge or Use

291k62 Weight and Sufficiency

291k62(2) k. Oral Testimony and

Recollection of Witnesses. [Most Cited Cases](#)

Combination of television and digital pillow speaker was publicly used prior to critical date for patent for digital pillow speakers used to operate televisions in hospital rooms, as required for patent to be invalid for anticipation, given expert's testimony that, while he was employed with television manufacturer and its successor company, pillow speaker used in combination with manufacturer's television was developed by another company using technical

information that he provided and that such pillow speaker was on sale and being publicly used together with manufacturer's television prior to patent's critical date, and given evidence corroborating expert's statements, including other testimony, documentary evidence, and patentee's own admissions. 35 U.S.C.A. § 102(b).

[9] Patents 291 🔑323.2(4)

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k323 Final Judgment or Decree

291k323.2 Summary Judgment

291k323.2(4) k. Affidavits or Other Evidence. Most Cited Cases
Denying patentee's motion to exclude competitor's expert as technical expert and to strike his declaration in deciding issue of anticipation of patent on summary judgment was not abuse of discretion, given that court found no basis for disqualifying expert as technical expert and was able to evaluate expert's testimony on fact-by-fact basis to disregard testimony that was improperly conclusive or inconsistent with underlying evidence.

[10] Patents 291 🔑66(1.14)

291 Patents

291II Patentability

291II(D) Anticipation

291k63 Prior Patents

291k66 Operation and Effect

291k66(1.14) k. Electricity, Electronics, and Radio. Most Cited Cases
Public use of competitor's television and digital pillow speaker in combination anticipated each limitation of patent for digital pillow speakers used to operate televisions in hospital rooms, as required for invalidity of patent for anticipation. 35 U.S.C.A. § 102(b).

[11] Patents 291 🔑210

291 Patents

291X Title, Conveyances, and Contracts

291X(C) Licenses and Contracts

291k208 Requisites and Validity of Licenses

291k210 k. Implied Licenses. Most Cited Cases

There are two requirements for implied license defense when patentee or its licensee sells an article in circumstances raising question whether sale carries with it a license to engage in conduct that would infringe patentee's rights: equipment involved must have no noninfringing uses, and circumstances of sale must plainly indicate that grant of a license should be inferred.

[12] Patents 291 🔑211(1)

291 Patents

291X Title, Conveyances, and Contracts

291X(C) Licenses and Contracts

291k211 Construction and Operation of Licenses

291k211(1) k. In General. Most Cited Cases

Express license granted by patentee of digital pillow speakers used to operate televisions in hospital rooms to pillow speaker manufacturers, which authorized sale of manufacturers' pillow speakers for infringing uses, rendered irrelevant issue of whether manufacturers' pillow speakers were capable of noninfringing uses for purposes of implied license defense to patent infringement claim asserted by alleged infringer, which made and sold televisions that would work with manufacturers' pillow speakers.

[13] Patents 291 🔑210

291 Patents

291X Title, Conveyances, and Contracts

291X(C) Licenses and Contracts

291k208 Requisites and Validity of Licenses

291k210 k. Implied Licenses. Most Cited Cases

Implied licenses that were granted by patentee to

customers of licensees of patent for digital pillow speakers used to operate televisions in hospital rooms extended to customers' use of licensees' pillow speakers in combination with any compatible television, and not just patentee's televisions, given that granting clauses in license agreements from which implied licenses were derived contained no binding restrictions.

[14] Patents 291 ⚙️66(1.14)

291 Patents

291II Patentability

291II(D) Anticipation

291k63 Prior Patents

291k66 Operation and Effect

291k66(1.14) k. Electricity, Electronics, and Radio. Most Cited Cases

Competitor did not establish invalidity for anticipation of claim of patent directed at making hospital-room televisions compatible with both digital and analog pillow speakers when competitor presented no evidence that prior device anticipated two limitations of patent claim, and instead simply asserted that to the extent accused product was considered to practice those limitations, so did prior device.

[15] Federal Civil Procedure 170A ⚙️2544

170A Federal Civil Procedure

170AXVII Judgment

170AXVII(C) Summary Judgment

170AXVII(C)3 Proceedings

170Ak2542 Evidence

170Ak2544 k. Burden of Proof.

Most Cited Cases

Party opposing summary judgment is required to set out specific facts showing a genuine issue for trial only when movant's motion for summary judgment is properly made and supported, or, in other words, when movant has otherwise established entitlement to judgment as a matter of law. **Fed.Rules Civ.Proc.Rule 56(e)(2), 28 U.S.C.A.**

[16] Patents 291 ⚙️51(1)

291 Patents

291II Patentability

291II(D) Anticipation

291k50 Prior Knowledge or Use

291k51 Nature and Extent in General

291k51(1) k. In General. Most

Cited Cases

Invalidity of patent based on anticipation cannot be proved by merely establishing that one practices the prior art.

[17] Patents 291 ⚙️72(1)

291 Patents

291II Patentability

291II(D) Anticipation

291k72 Identity of Invention

291k72(1) k. In General. Most Cited

Cases

Mere proof that prior art is identical, in all material respects, to an allegedly infringing product cannot constitute clear and convincing evidence of invalidity of patent, inasmuch as anticipation requires a showing that each element of the claim at issue, properly construed, is found in a single prior art reference.

[18] Patents 291 ⚙️324.60

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k324 Appeal

291k324.60 k. Determination and Dis-

position of Cause. Most Cited Cases

Court of Appeals lacked adequate foundation upon which to weigh parties' claim construction arguments pertaining to term "programmed to ignore" in disputed claim of patent directed at making hospital-room televisions compatible with both digital and analog pillow speakers and competitor's assertion that patent was invalid for anticipation when district court, in construing patent term, did not do so by way of reference to patent's claims, written description, prosecution history, and extrinsic evidence, but instead relied upon patentee's theory of

infringement and apparent construction of patent claim, necessitating consideration of issue by district court on remand.

[19] Patents 291 ⚔ 324.5

291 Patents

291XII Infringement

291XII(C) Suits in Equity

291k324 Appeal

291k324.5 k. Scope and Extent of Review in General. Most Cited Cases

Although patent claim construction is a question of law reviewed de novo on appeal, review by Court of Appeals of district court's claim construction is not an independent analysis in the first instance, and to perform such a review, Court of Appeals must be furnished sufficient findings and reasoning to permit meaningful appellate scrutiny.

[20] Patents 291 ⚔ 210

291 Patents

291X Title, Conveyances, and Contracts

291X(C) Licenses and Contracts

291k208 Requisites and Validity of Licenses

291k210 k. Implied Licenses. Most Cited Cases

Implied license defense to patent infringement claims asserted by competitor that made and sold televisions that would work with pillow speakers manufactured by patentee's licensees, pursuant to license agreements for patent for digital pillow speakers used to operate televisions in hospital rooms, did not apply to alleged infringement of patentee's second patent, which was directed at making hospital-room televisions compatible with both digital and analog pillow speakers, given that license agreements giving rise to implied license for pillow speakers did not extend to second patent, and that use of licensees' digital pillow speakers in combination with televisions not capable of receiving analog control signals would not infringe second patent, such that those pillow speakers had non-infringing uses and their sale did not imply license

for use with televisions having additional features claimed in second patent.

[21] Federal Courts 170B ⚔ 13

170B Federal Courts

170BI Jurisdiction and Powers in General

170BI(A) In General

170Bk12 Case or Controversy Requirement

170Bk13 k. Particular Cases or Questions, Justiciable Controversy. Most Cited Cases
Alleged infringer's counterclaim alleging inequitable conduct by owner of patent for digital pillow speakers used to operate televisions in hospital rooms was not rendered "moot" by determinations that one claim of patent was invalid as anticipated and that patent was not infringed due to existence of implied license.

[22] Federal Courts 170B ⚔ 13

170B Federal Courts

170BI Jurisdiction and Powers in General

170BI(A) In General

170Bk12 Case or Controversy Requirement

170Bk13 k. Particular Cases or Questions, Justiciable Controversy. Most Cited Cases
Finding of noninfringement does not moot a counterclaim for inequitable conduct in patent infringement action.

[23] Patents 291 ⚔ 97

291 Patents

291IV Applications and Proceedings Thereon

291k97 k. Patent Office and Proceedings Therein in General. Most Cited Cases
When inequitable conduct occurs in relation to one claim, the entire patent is unenforceable.

[24] Patents 291 ⚔ 97

291 Patents

291IV Applications and Proceedings Thereon

291k97 k. Patent Office and Proceedings

Therein in General. [Most Cited Cases](#)

That inequitable conduct with respect to one claim of patent would render entire patent unenforceable did not excuse failure of alleged infringer, in asserting inequitable conduct counterclaims in patent infringement action, to introduce evidence that television which purportedly anticipated claim of patent directed at making hospital-room televisions compatible with both digital and analog pillow speakers was material to limitations recited in other challenged claims of patent, warranting dismissal with prejudice of counterclaims concerning those patent claims.

Patents 291 328(2)

[291 Patents](#)

[291XIII](#) Decisions on the Validity, Construction, and Infringement of Particular Patents

[291k328](#) Patents Enumerated

[291k328\(2\)](#) k. Original Utility. [Most](#)

[Cited Cases](#)

[5,495,301](#). Invalid and Not Infringed.

Patents 291 328(2)

[291 Patents](#)

[291XIII](#) Decisions on the Validity, Construction, and Infringement of Particular Patents

[291k328](#) Patents Enumerated

[291k328\(2\)](#) k. Original Utility. [Most](#)

[Cited Cases](#)

[5,502,513](#). Cited.

*[1351](#) [Robert E. Browne](#), Neal Gerber & Eisenberg LLP, of Chicago, Illinois, argued for plaintiff-appellant. With him on the brief were [Michael A. Carrillo](#), [Thomas C. McDonough](#), William J. Lenz, and [Hillary A. Mann](#).

[Gregory F. Ahrens](#), Wood, Herron & Evans, L.L.P., of Cincinnati, Ohio, argued for defendant-appellee. With him on the brief was [John P. Davis](#).

Before [NEWMAN](#), [LOURIE](#), and [SCHALL](#), Circuit Judges.

[SCHALL](#), Circuit Judge.

This is a patent infringement case. Two patents are at issue: [United States Patent No. 5,495,301](#) (the “[301 patent](#)”) and [United States Patent No. 5,502,513](#) (the “[513 patent](#)”). Both patents are owned by Zenith Electronics Corporation (“Zenith”). The ‘301 and ‘513 patents generally relate to televisions and wired remote control devices used in hospital rooms.

*[1352](#) Zenith appeals from the final judgment of the United States District Court for the Northern District of Illinois in favor of PDI Communications Systems, Inc. (“PDI”) in Zenith’s suit against PDI for infringement of the ‘301 and ‘513 patents. The district court entered judgment in favor of PDI after granting summary judgment of (1) invalidity of claim 1 of the ‘301 patent and claim 1 of the ‘513 patent by reason of anticipation; (2) noninfringement of the ‘301 patent; and (3) noninfringement of claim 1 of the ‘513 patent. *Zenith Elecs. Corp. v. PDI Commc’n Sys., Inc.*, No. 04-C-4796, slip op. at 1 (N.D.Ill. Mar. 21, 2007) (“*Order Entering Judgment*”); *Zenith Elecs. Corp. v. PDI Commc’n Sys., Inc.*, No. 04-C-4796, slip op. at 39-40 (N.D.Ill. Jan. 18, 2007) (“*Summary Judgment Order*”). For its part, PDI cross-appeals the district court’s (1) dismissal without prejudice of PDI’s counterclaim of inequitable conduct with respect to the ‘301 patent and claim 1 of the ‘513 patent and (2) dismissal with prejudice of PDI’s counterclaim of inequitable conduct with respect to claims 2-8 of the ‘513 patent. *Order Entering Judgment* at 2; *Summary Judgment Order* at 39-40. PDI also cross-appeals the district court’s denial of its motion for costs. *Zenith Elecs. Corp. v. PDI Commc’n Sys., Inc.*, No. 04-C-4796 (N.D.Ill. Mar. 28, 2007).

For the reasons set forth below, we affirm the district court’s (1) grant of summary judgment of invalidity of claim 1 of the ‘301 patent; (2) grant of summary judgment of noninfringement of the ‘301 patent; and (3) dismissal with prejudice of PDI’s counterclaim of inequitable conduct with respect to claims 2-8 of the ‘513 patent. However, we vacate the district court’s (1) grant of summary judgment

of invalidity of claim 1 of the '513 patent; (2) grant of summary judgment of noninfringement of claim 1 of the '513 patent; (3) dismissal without prejudice of PDI's counterclaim of inequitable conduct with respect to the '301 patent and claim 1 of the '513 patent; and (4) denial of PDI's motion for costs. As far as these matters are concerned, we remand the case to the district court for further proceedings. In sum, we affirm-in-part, vacate-in-part, and remand.

BACKGROUND

I.

Due to various safety and business considerations, wireless remote control devices are not used to control televisions in hospital rooms. First, the electrostatic discharge associated with wireless remote controls cannot be risked near supplies of oxygen. Second, the signals transmitted by wireless remote controls are susceptible to interference from fluorescent lights. Finally, there are increased costs associated with battery replacement and lost wireless remote controls. For these reasons, hospital televisions are typically controlled using hardwired remote control devices placed near the patient. These devices also include internal speakers by which television audio is delivered to the patient and, thus, are interchangeably referred to as "pillow speakers."

By the late 1980s, pillow speakers were generally connected to televisions in hospital rooms via three wires. Over these three wires (1) power was supplied to the pillow speaker, (2) audio signals were transmitted to the pillow speaker, and (3) control signals were transmitted to the television. However, control functionality was limited due to the fact that existing systems utilized *analog* control signals. The invention of the patents-in-suit enabled the transmission of encoded *digital* control signals from the pillow speaker to the television receiver over the existing three-wire interfaces installed in hospital rooms. Advantageously, the improved di-

gital pillow speakers-like their analog *1353 precursors-continued to receive power from the television and did not require an internal source of power (i.e., a battery). Claim 1, which is representative of the method claims of the '301 patent, provides:

1. A method of operating a television receiver wired to a remote housing including a speaker and a multi function control signal encoder comprising:

supplying operating power to said multi function control signal encoder from the television receiver over first and second wires;

supplying audio signals to said speaker from said television receiver over said first wire and a third wire; and

supplying encoded control signals from said multi function encoder to said television receiver over said first and second wires.

Claim 1 of the '513 patent, which is representative of the method claims of that patent, provides:

1. A method of controlling a television receiver in response to a key closure or data pulses received from a remote location over a pair of wires, the key closure having a substantially longer duration than the data pulses, comprising:

receiving said key closure and said data pulses;

decoding said data pulses with a microprocessor programmed to ignore said key closure;

detecting said key closure with a timing circuit; and

operating key closure identification circuitry in response to said timing circuit.

II.

By 1997, three companies-Curbell Electronics ("Curbell"), MedTek, Inc. ("MedTek"), and Crest Electronics ("Crest")-manufactured and distributed

digital pillow speakers pursuant to licenses of the '301 patent obtained from Zenith. The pillow speakers were specifically designed to operate Zenith televisions using Zenith control codes.

In 2003, PDI began marketing a new 20-inch LCD television (model no. "P20LCD") for use in the healthcare industry. PDI designed the P20LCD television for compatibility with digital pillow speakers that used Zenith control codes-i.e., the digital pillow speakers manufactured by Curbell, MedTek, and Crest. On July 21, 2004, Zenith filed a complaint against PDI in the United States District Court for the Northern District of Illinois, alleging infringement of claims 1-4 of the '301 patent FN1 and claims 1-8 of the '513 patent. Zenith maintained that PDI directly infringes by testing and operating its P20LCD televisions with pillow speakers and that PDI indirectly infringes by supplying P20LCD televisions and encouraging its customers to operate the televisions using pillow speakers. In addition to pursuing affirmative defenses, PDI counterclaimed for a declaration that the ' 301 and '513 patents are invalid due to anticipation, unenforceable because of inequitable conduct, and not infringed by the P20LCD.

FN1. Claims 1-4 of the '301 patent relate to the method of operating a television with a pillow speaker. Claims 5-11 of the '301 patent are directed to a "pillow speaker remote control." Claims 5-11 of the '301 patent are not at issue in this case. *Summary Judgment Order* at 35 n. 9.

III.

After the close of discovery, both parties filed motions for summary judgment. Zenith moved for summary judgment that (1) claim 1 of the '301 patent and claim 1 of the '513 patent are infringed and that (2) Zenith did not commit inequitable conduct during prosecution of the '301 and '513 *1354 patents. Zenith asserted that there was no genuine issue of material fact that the P20LCD television, when used in combination with a digital pillow

speaker, performs every step of claim 1 of the '301 patent and claim 1 of the '513 patent. Zenith also urged that, under the evidence presented, PDI could not possibly meet its burden of establishing inequitable conduct.

PDI cross-moved for summary judgment that (1) claim 1 of the '301 patent and claim 1 of the '513 patent are invalid due to anticipation and that (2) claims 1-4 of the '301 patent are not infringed. With respect to validity, PDI argued that there was no genuine issue of material fact that claim 1 of the '301 patent and claim 1 of the '513 patent were anticipated by the public use of a television (model no. "J20525") manufactured by Radio Corporation of America ("RCA") in combination with a digital pillow speaker (model no. "205-E") manufactured by Curbell prior to December 27, 1993-the critical date corresponding to both patents. PDI also argued that, under the undisputed facts, the implied license and exhaustion defenses precluded Zenith's claims that the use of pillow speakers manufactured by Curbell, MedTek, and Crest-in conjunction with P20LCD televisions-infringes the ' 301 patent.

Subsequently, Zenith moved to disqualify PDI's technical expert, William Mengel, and to strike the April 6, 2006, declaration of Mr. Mengel used by PDI to support its summary judgment motion. Zenith complained that Mr. Mengel's deposition testimony, expert reports, and declaration contained certain factual errors and incorrect statements of law. Zenith further argued that Mr. Mengel's declaration added new testimony, improperly supplementing his prior reports in an untimely manner.

The district court issued its *Summary Judgment Order* on January 18, 2007. The court denied-at least for purposes of summary judgment-Zenith's motion to disqualify Mr. Mengel as a technical expert and to strike his declaration. *Summary Judgment Order* at 20. On the issue of validity, the court held that PDI was entitled to summary judgment that claim 1 of the '301 patent and claim 1 of the '513 patent were anticipated by the public use of the J20525/205-E combination prior to the critical date.

Id. at 8-18. On infringement, the court cited our decision in *LG Electronics, Inc. v. Bizcom Electronics, Inc.*, 453 F.3d 1364 (Fed.Cir.2006), for the proposition that the doctrine of exhaustion does not apply to method claims, and thus, the court concluded that PDI could not establish an exhaustion defense with respect to the asserted method claims (claims 1-4 of the '301 patent). *Summary Judgment Order* at 24-26. Nevertheless, the court held that PDI was entitled to summary judgment of noninfringement of the '301 patent due to the existence of an implied license. The implied license, the court determined, was based upon the express licenses between Zenith and the pillow speaker manufacturers. *Id.* at 26-36. Finally, the court dismissed with prejudice PDI's counterclaim that claims 2-8 of the '513 patent are unenforceable due to inequitable conduct, finding that PDI had made no attempt to demonstrate the materiality of conduct during prosecution with respect to the limitations of those claims. *Id.* at 36-37. The court dismissed *without* prejudice PDI's counterclaim of inequitable conduct with respect to the '301 patent and claim 1 of the '513 patent as moot in light of its rulings on validity and infringement.^{FN2} *Id.* at 37.

FN2. The district court's summary judgment rulings on validity, infringement, and inequitable conduct left in place Zenith's claims that PDI infringed claims 2-8 of the '513 patent. Subsequently, Zenith agreed to the dismissal without prejudice of its claims of infringement of those claims.

*1355 DISCUSSION

We have jurisdiction over Zenith's appeal pursuant to 28 U.S.C. § 1295(a)(1). "We review the grant of summary judgment de novo, drawing all reasonable inferences in favor of the non-moving party." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1323 (Fed.Cir.2002) (citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986)). Summary judgment is only appropriate if there are no genuine issues of material fact and the movant is entitled to judgment as a

matter of law. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1116 (Fed.Cir.1985) (en banc).

Zenith appeals various aspects of the district court's *Summary Judgment Order*. We address each of Zenith's contentions in turn, beginning with those relating to the '301 patent.

I.

A.

[1] Zenith first argues that the district court erred in granting summary judgment that claim 1 of the '301 patent is invalid as anticipated by the public use of the RCA J20525 television in combination with the Curbell 205-E digital pillow speaker prior to the patent's critical date. As a preliminary matter, Zenith contends that the district court erred in construing the term "operating power" that appears in claim 1, and that the J20525/205-E combination did not meet the "operating power" limitation as properly construed.

Claim 1 requires that the invention's multi-function control signal encoder-the integrated circuit within the pillow speaker responsible for encoding and transmitting the digital control signals-receive "operating power" from the television receiver. The district court concluded that the J20525/205-E combination satisfied the plain meaning of the "operating power" limitation because "[t]he source of all the power being supplied to the 205E was the J20525." *Summary Judgment Order* at 11.

On appeal, Zenith argues that the district court misconstrued the term "operating power." Zenith contends that the RCA J20525 television was incapable of supplying "operating power" to the Curbell 205-E pillow speaker. That is because the J20525 television could supply a maximum of 0.48 milliamperes (mA) of current, while the encoder chip in the 205-E pillow speaker required at least 5 mA to operate. According to Zenith, Curbell surmounted

this obstacle by incorporating into the design of the 205-E a large capacitor-essentially a storage tank that slowly accumulated electrical charge received from the television and that, in turn, provided the charge to the encoder chip as required. Zenith thus maintains that, while the J20525 television may have supplied “power” to the 205-E pillow speaker, it did not provide “operating power.” Instead, Zenith argues that “operating power” was supplied by the pillow speaker's capacitor, which functioned like a battery.

PDI responds that the district court's construction of “operating power” was correct. According to PDI, the J20525 television necessarily supplied “*operating power*” to the 205-E pillow speaker because it was undisputed that the J20525 television was the only source of *power* for the 205-E pillow speaker. Any power supplied to the pillow speaker by the capacitor was first supplied to the capacitor by the television. Thus, PDI contends, the “power” used to “operate” the 205-E pillow speaker was supplied by the J20525 television-exactly as claim 1 requires.

***1356** We agree with the district court and PDI. Nothing in the patent's claims or written description suggests a departure from the disputed term's ordinary meaning: an amount of power that is sufficient to enable the operation of the multi-function control signal encoder. Nor has Zenith pointed to anything contrary in the patent's prosecution history. Like the district court, we can find no requirement “that the operating power must come directly from the television or in full and continuous strength from the television.” *Id.* at 11.

Zenith points out a portion of the specification that states: “A current source is defined through resistor 40 and must be sufficient to accommodate the worst case scenario of power requirements of encoder 12.” ‘301 patent col.4 ll.7-9. We note, however, that resistor 40 is a component of the pillow speaker, not the television receiver. *Id.* Fig. 1A. Thus, the statement at column 4, lines 7-9 does not signify that the television receiver must directly and continuously supply enough current to meet the en-

coder's maximum power requirements. Indeed, the specification expressly teaches that a capacitor in the pillow speaker supplements to some degree the current received from the television receiver during periods of peak power draw. *Id.* col.4 ll.19-23. We therefore agree with the district court's conclusion that the J20525/205-E combination anticipated the “operating power” limitation recited in claim 1 of the ‘301 patent.

B.

Next, Zenith argues that, even if the J20525 television provided “operating power” to the 205-E pillow speaker, PDI did not otherwise meet its burden of proving the elements of public use on summary judgment. Specifically, Zenith contends that PDI was not entitled to summary judgment that claim 1 of the ‘301 patent is invalid because PDI did not provide clear and convincing evidence (1) that the J20525 television and 205-E pillow speaker were used together prior to the critical date, (2) that the alleged use of the J20525/205-E was a public use, and (3) that the alleged use of the J20525/205-E was enabling. According to PDI, summary judgment of invalidity was proper because there was no genuine issue of material fact with respect to those issues.

[2][3][4] “A person shall be entitled to a patent unless ... the invention was ... in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.” 35 U.S.C. § 102(b) (2000). Determining whether a patent claim is invalid for prior public use under section 102(b) requires comparing the claim to the alleged public use. “Section 102(b) may bar patentability by anticipation if the device used in public includes every limitation of the later claimed invention....” *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1321 (Fed.Cir.2002) (citations omitted). Contrary to Zenith's arguments, however, we note that the public use itself need not be enabling. See *In re Epstein*, 32 F.3d 1559, 1568 (Fed.Cir.1994) (“Beyond this ‘in public use or on

sale' finding, there is no requirement for an enablement-type inquiry."). Rather, we must simply determine whether the public use related to a device that embodied the invention. See *J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 1583 (Fed.Cir.1986) ("[O]ur precedent holds that the question is not whether the sale, even a third party sale, 'discloses' the invention at the time of the sale, but whether the sale relates to a device that *embodies* the invention."(emphasis in original)).

[5][6][7] Anticipation is a question of fact. *Gen. Elec. Co. v. Nintendo Co., Ltd.*, 179 F.3d 1350, 1353 (Fed.Cir.1999). Anticipation may be resolved on summary judgment*1357 if there is no genuine issue of material fact. *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1294 (Fed.Cir.2002). In reviewing summary judgment of invalidity for anticipation, we determine *de novo* whether the evidence in the record raises a genuine issue of material fact. *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1327 (Fed.Cir.2001). Summary judgment is proper if no reasonable jury could find that the patent is not anticipated. *Id.* Upon review of the record before us, we agree with the district court's determination that there is no disputed issue of material fact; we further conclude that no reasonable juror could find claim 1 of the '301 patent not anticipated by the public use of the J20525/205-E combination prior to the critical date.

[8][9] First, we conclude that there is no genuine issue of material fact with respect to whether the J20525 television and 205-E pillow speaker were publicly used together prior to the critical date. PDI's expert, William Mengel, was employed at RCA (and its successor company) from 1964 until his retirement in 2003.^{FN3} From 1981 to 1992, he was responsible for defining the features and attributes, and coordinating the design and engineering, of RCA's commercial healthcare televisions-including the J20525 television. Mr. Mengel stated that the J20525 television was first introduced into the market in 1989. According to Mr. Mengel, Curbell developed the 205-E pillow speaker, based upon

technical information that he provided, specifically for use with the J20525 television. Finally, Mr. Mengel stated that the 205-E pillow speaker was developed prior to 1991, and was on sale and being publicly used together with the J20525 television well before the December 27, 1993 critical date.

FN3. We do not think that the district court abused its discretion in denying Zenith's motion to exclude Mr. Mengel as a technical expert and to strike his declaration. The district court noted Zenith's concerns with respect to Mr. Mengel's testimony, but stated:

On summary judgment, this court will not give credence to the legal aspect of mixed conclusions of fact and law that are based on incorrect legal standards. The court, however, can do that on a fact-by-fact basis as necessary without the wholesale throwing out of all of Mengel's testimony.... Moreover, there is no reason to throw out Mengel's testimony about technical matters. Unless his technical testimony is improperly conclusive or shown to be inconsistent with the underlying evidence, it will be accepted.

Summary Judgment Opinion at 20. With respect to Mr. Mengel's technical qualifications, the court noted that he is a senior member of the Institute of Electrical and Electronics Engineers, and that he had worked in the electronics industry for 39 years. *Id.* at 19 n. 4. The court thus found no basis for disqualifying Mr. Mengel as a technical expert. *Id.* at 19-20. We do not think that the district court's actions with respect to Mr. Mengel's expert reports, declaration, and deposition testimony constitute an abuse of discretion.

Importantly, Mr. Mengel's statements are corrobor-

ated by testimony from other witnesses, documentary evidence, and Zenith's own admissions. See *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1367-70 (Fed.Cir.1999) (requiring corroboration of witness's testimony that his prior public use of the claimed invention was anticipatory). Two Curbell employees closely involved in the development of the 205-E pillow speaker, Michael Chimiak and Wesley Wakefield, confirmed that it was introduced to the market prior to December 27, 1993.^{FN4} In addition, the *1358 record contains a product literature sheet describing features of the Curbell 205-E pillow speaker and stating that it controls RCA J20525 televisions. Based upon the Curbell address printed on the sheet, Douglas Rockwood,^{FN5} Curbell's General Manager, testified that it must have dated from 1992 or earlier. Further, in its motion for summary judgment before the district court, Zenith itself stated that "[d]iscovery has shown that at the time of the invention-early 1994-the 'RCA system' using the Curbell 205E pillow speaker without batteries had been recalled from the market." Zenith also stated that "the super capacitor was removed from the 205E and replaced by batteries in about 1992, less than one year after it was introduced."

^{FN4}. Zenith complains that Mr. Chimiak and Mr. Wakefield had great difficulty recalling the dates in dispute. However, Mr. Wakefield testified that he was "quite certain" that a capacitor version of the pillow speaker existed as a product when he became a master technician in late 1991/early 1992. Mr. Chimiak's testimony, though somewhat more equivocal, confirms that general timeframe.

^{FN5}. Zenith itself characterizes Mr. Wakefield and Mr. Rockwood as "disinterested" witnesses.

Although Zenith contests much of PDI's evidence of public use, we find that Zenith's arguments do not establish a *genuine* issue of material fact on that issue. Specifically, Zenith cites a 1998 Curbell

product manual, which stated that "the RCA Model J20531 BL [which was introduced long after the J20525] is the only set capable of powering the Digital Pillow Speaker [without the need for batteries]." However, Mr. Rockwood testified that the Digital Pillow Speaker referred to in the 1998 Curbell product manual was a separate pillow speaker (model "DPS") that was introduced after the 205-E in 1995. With respect to the product literature sheet, Zenith complains that Mr. Rockwood was unable to state with certainty whether the sheet described the capacitor version of the 205-E pillow speaker or Curbell's subsequently developed battery-powered version. Even so, the product literature sheet and Mr. Rockwood's testimony support the conclusion that the capacitor version of the 205-E pillow speaker-a precursor to the battery version-was available for use with the J20525 television *at least* as early as 1992. We thus conclude that there was no genuine issue of material fact with respect to whether the Curbell 205-E pillow speaker was used publicly with the RCA J20525 television prior to the critical date of the '301 patent.

[10] Next we must consider whether the J20525/205-E combination anticipates each limitation of claim 1 of the '301 patent. We conclude that it does. Claim 1 requires the steps of (1) supplying operating power to the pillow speaker's encoder, (2) supplying audio signals to the pillow speaker, and (3) supplying encoded control signals to the television receiver.^{FN6} Based on his review of schematics and testing that he performed, Mr. Mengel stated-in his first expert report and subsequent declaration-that the J20525/205-E performed each of these three steps. Mr. Wakefield stated the same in his deposition testimony.

^{FN6}. The operating power and encoded control signals must be supplied over "first and second wires." '301 patent claim 1. The audio signals must be supplied over a "first wire and a third wire." *Id.*

Accompanying its cross-motion for summary judgment of invalidity, PDI submitted a "Statement of

Material Facts as to which PDI contends there is no genuine issue,” which was required by Local Rule 56.1(a)(3) (“Rule 56.1 Statement”).^{FN7} Citing Mr. Mengel’s declaration, PDI alleged in *1359 paragraphs 18-20 that the J20525 television supplied *operating power* to the 205-E pillow speaker over a first and second wire (¶ 18), that the J20525 television supplied *audio signals* to an internal speaker in the 205-E pillow speaker via a first and third wire (¶ 19), and that the encoder in the 205-E pillow speaker supplied *encoded control signals* to the J20525 television over the first and second wires (¶ 20). PDI summarized in paragraph 21: “The RCA J20525 television and the Curbell 205-E pillow speaker performed each step of claim 1 of the ‘301 patent.”

FN7. Local Rule 56.1(a)(3) provides: “With each motion for summary judgment filed pursuant to Fed.R.Civ.P. 56 the moving party shall serve and file ... a statement of material facts as to which the moving party contends there is no genuine issue and that entitle the moving party to a judgment as a matter of law....” Available at <http://www.ilnd.uscourts.gov/home/LocalRules.aspx?rtab=localrule> (last accessed March 10, 2008).

With respect to paragraphs 19 and 20, Zenith’s only objections were that PDI did not reference a specific time period. That is, Zenith only objected to paragraphs 19 and 20 inasmuch as Zenith disputed the fact that the J20525 television and 205-E pillow speaker were used together prior to the critical date. Because—as discussed above—the district court correctly concluded that there was no genuine issue of material fact with respect to whether the J20525 television and 205-E pillow speaker were used in combination prior to the critical date, the district court was justified in deeming the allegations in paragraphs 19 and 20 established.^{FN8} That is, the district court properly considered it undisputed that the J20525 television supplied audio signals to the 205-E pillow speaker, and that the 205-E pillow

speaker supplied encoded control signals to the J20525 television. *Summary Judgment Order* at 12-13.

FN8. Pursuant to Local Rule 56.1(b)(3)(C), “[a]ll material facts set forth in the statement required of the moving party will be deemed to be admitted unless controverted by the statement of the opposing party.”

With respect to paragraph 18, Zenith did complain that PDI had not met its burden of proving that the J20525 television supplied “operating power” to the 205-E pillow speaker. However, the focus of Zenith’s objection—as evidenced by its accompanying memorandum—was that PDI had incorrectly construed the “operating power” limitation. It explained: “While Zenith concedes that the RCA television receiver may supply some amount of ‘power’ to the pillow speaker, it is not capable, on its own, of supplying enough power to operate the encoder and therefore cannot possibly be considered ‘operating power.’ If it was enough, then the function of the super capacitor would be rendered moot. Indeed, the only ‘operating power’ that is ever supplied to the encoder in the 205-E pillow speaker is supplied by this super capacitor, not the television receiver....”

As explained above, we disagree with Zenith’s construction of “operating power.” Power that originates at the television and that is sufficient to enable the operation of the encoder is “operating power” according to claim 1, though it may be temporarily stored in a capacitor. Zenith concedes that all power temporarily stored in the capacitor of the 205-E pillow speaker is ultimately supplied by the J20525 television; indeed, it has never maintained otherwise. Thus, we discern no genuine issue of material fact with respect to whether the J20525/205-E combination satisfied the “operating power” limitation of claim 1, properly construed.

No genuine issue having been raised with respect to the required factual elements of proof, we conclude that the district court properly granted summary

judgment that claim 1 of the '301 patent is invalid as anticipated by the public use of the J20525 television in combination with the 205-E pillow speaker prior to the critical date.

II.

[11] Next, we consider the district court's grant of summary judgment that *1360 the '301 patent is not infringed due to the existence of an implied license. The implied license defense is typically presented "when a patentee or its licensee sells an article and the question is whether the sale carries with it a license to engage in conduct that would infringe the patent owner's rights." *Jacobs v. Nintendo of Am., Inc.*, 370 F.3d 1097, 1100 (Fed.Cir.2004). In that setting, this court has set forth two requirements for the grant of an implied license. *Met-Coil Sys. Corp. v. Korners Unlimited, Inc.*, 803 F.2d 684, 686 (Fed.Cir.1986). "First, the equipment involved must have no noninfringing uses." *Id.* (citing *Bandag, Inc. v. Al Bolser's Tire Stores, Inc.*, 750 F.2d 903, 924 (Fed.Cir.1984)). "If there is no noninfringing use, it may be reasonable to infer that there has been 'a relinquishment of the patent monopoly with respect to the article sold.' " *Jacobs*, 370 F.3d at 1100 (citing *United States v. Univis Lens Co.*, 316 U.S. 241, 249, 62 S.Ct. 1088, 86 L.Ed. 1408 (1942)). "Second, the circumstances of the sale must 'plainly indicate that the grant of a license should be inferred.' " *Met-Coil*, 803 F.2d at 686 (quoting *Bandag*, 750 F.2d at 925).

The district court held that purchasers of pillow speakers manufactured by Curbell, MedTek, and Crest obtain an implied license under the '301 patent to use the pillow speakers in combination with any compatible television-not just Zenith televisions. *Summary Judgment Order* at 27-37. The court first determined that Zenith had failed to rebut PDI's prima facie showing that the pillow speakers are not capable of noninfringing uses. *Id.* at 29-30. Because there are no uses of the pillow speakers that do not infringe the '301 patent, the court reasoned that customers purchasing the pillow

speakers must obtain some form of implied license. *Id.* In order to determine the *scope* of that implied license, the court examined the express licenses between Zenith and the pillow speaker manufacturers. *Id.* at 30. Noting the lack of any binding restrictions in the express licenses, the court concluded that "[t]he [express] license agreements can only be construed as permitting sale of the pillow speakers for use with any compatible television, Zenith or not. Therefore, PDI did not infringe the '301 Patent by being involved in the manufacture, sale, or distribution of televisions that would work with the licensees' pillow speakers." *Id.* at 36.

[12] On appeal, Zenith challenges both aspects of the district court's ruling. First, Zenith contends that the district court improperly shifted the burden onto Zenith to establish the absence of noninfringing uses. Regardless, Zenith argues that the record actually did reflect evidence of noninfringing uses, including use of the pillow speakers to control non-television devices such as nurse-call systems, lighting systems, and FM radios. PDI responds that these pillow speaker functions are not "noninfringing uses" that would negate an implied license, but rather are "merely additional uses that complement the otherwise infringing uses."

Although the parties place a great deal of emphasis on whether the pillow speakers manufactured by Curbell, MedTek, and Crest are capable of noninfringing uses, that question is irrelevant in the context of this case. To be sure, establishing the absence of noninfringing uses is a prerequisite in the typical implied license case, where the question is whether a license is implied "by virtue of a sale of nonpatented equipment used to practice a patented invention." *Met-Coil*, 803 F.2d at 686 (emphasis added). Here, however, the license is not merely implied by virtue of the sale of pillow speakers by Curbell, MedTek, and Crest. Instead, the implied license that customers obtain to use the pillow speakers according to the method of *1361 the '301 patent is derived from the *express licenses* between Zenith and those manufacturers.

In that regard, this case is similar to *Jacobs*. There, Nintendo of America, Inc. (“Nintendo”) manufactured and sold tilt-sensitive video game controllers using accelerometers purchased from Analog Devices, Inc. (“Analog”). *Jacobs*, 370 F.3d at 1098. The patent owner, Jordan Jacobs, sued Nintendo, claiming that Nintendo’s controllers infringed his patented “Manually Held Tilt Sensitive Non-Joystick Control Box.” *Id.* On appeal, we affirmed the district court’s grant of summary judgment that Jacobs was barred from suing Nintendo for infringement of the patent based on the existence of an implied license. *Id.* at 1102. We determined that Nintendo obtained an implied license to practice Jacobs’ patent. The implied license was derived from an express license between Jacobs and Analog that specifically authorized Analog to sell the accelerometers for infringing uses. *Id.* at 1100. We concluded that “the question whether there is any non-infringing use for Analog’s accelerometers [was] irrelevant” in that context because “[t]he Jacobs-Analog agreement ... specifically authorized the sale of those accelerometers for infringing uses.” *Id.*

Likewise, the license agreements in this case between Zenith and the pillow speaker manufacturers specifically authorize the sale of pillow speakers for infringing uses. All three agreements include essentially the same grant of patent rights:

ARTICLE 1-GRANT

1. Zenith agrees to grant and does hereby grant to LICENSEE a nonexclusive license to make, have made, use, sell or otherwise dispose of LICENSED APPARATUS under the LICENSED PATENT, and foreign counterparts thereof, if any. The term LICENSED APPARATUS, as used in this Agreement, means:

A. Any pillow speaker unit:

i.) the manufacture, use or sale of which pillow speaker unit is covered by the LICENSED PATENT, and

ii.) which pillow speaker unit is manufactured, sold or otherwise disposed of by LICENSEE, whether such LICENSED APPARATUS is sold or otherwise disposed of as a separate article of commerce or as part of a television system.

(emphasis added).^{FN9} The agreements further define the “INTELLECTUAL PROPERTY LICENSED” as “U.S. patent 5,495,301.” It is clear from these express agreements that Zenith granted the manufacturers a license to make and sell any pillow speaker unit the use of which would otherwise infringe the ‘301 patent. As was the case in *Jacobs*, there is thus no reason to determine whether there are noninfringing uses for the pillow speakers.

^{FN9}. The Curbell license uses the plural term “LICENSED PATENTS” in Article 1. Like the licenses with the other two manufacturers, however, it enumerates only the ‘301 patent as “INTELLECTUAL PROPERTY LICENSED.” In addition, the Curbell license uses the term “remote control unit” in subparts i.) and ii.) instead of “pillow speaker unit.”

[13] Next, Zenith challenges the district court’s conclusion with respect to the scope of the implied license. According to Zenith, the implied license obtained by customers of Curbell, MedTek, and Crest extends only to their use of the pillow speakers in combination with Zenith televisions. Zenith specifically urges that the parties’ mutual intent upon entering the agreements was that they would apply only to the use of pillow speakers with Zenith televisions. As evidence of that intent, Zenith points to (1) the fact that the *1362 pillow speakers were designed to communicate using control codes specific to Zenith televisions, (2) certain “whereas” recitals referencing Zenith televisions in the preamble sections of the license agreements, and (3) statements by agents of two of the manufacturers to the effect that they understood the license agreements as being directed to the use of the pillow

speakers with Zenith televisions. According to PDI, however, the district court correctly determined that the implied license extends to use of the pillow speakers in combination with any compatible television, since the granting clause in the license agreements contains no binding restrictions.

We agree with the district court and PDI. As discussed above, the license agreements broadly grant Curbell, MedTek, and Crest authorization to “make, have made, use, sell or otherwise dispose of ... any pillow speaker unit ... the manufacture, use or sale of which pillow speaker unit is covered by the [‘301 patent].” No restrictions are placed upon the grants. For example, the agreements could have required the manufacturers to label each pillow speaker with a disclaimer informing purchasers that they are only licensed to use the pillow speakers with Zenith televisions. *Compare LG Elecs.*, 453 F.3d at 1370 (finding a conditional sale where the license “expressly disclaim [ed] granting a license allowing computer system manufacturers to combine Intel’s licensed parts with other non-Intel components” and the license “required Intel to notify its customers of the limited scope of the license”), with *Anton/Bauer, Inc. v. PAG, Ltd.*, 329 F.3d 1343, 1351 (Fed.Cir.2003) (finding an unrestricted sale where “there is no evidence that [the patentee] places express restrictions on the use of the female plates it sells or that it requires that manufacturers to whom it sells female plates expressly restrict the grant of a license upon sale of the finished camera product that incorporates the plate.”).

Here, the license agreements between Zenith and the pillow speaker manufacturers achieve a clear, broad grant of patent rights. There are no restrictions embodied in the operative, binding provisions of the agreements. In that context, we do not think that Zenith’s evidence of intent is limiting. *Cf. Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., Inc.*, 123 F.3d 1445, 1453 (Fed.Cir.1997) (With respect to repair rights, finding that “a seller’s intent, unless embodied in an enforceable contract, does not create a limitation on the right of

a purchaser to use, sell, or modify a patented product as long as a reconstruction of the patented combination is avoided. A noncontractual intention is simply the seller’s hope or wish, rather than an enforceable restriction.”).

In sum, we affirm the district court’s grant of summary judgment that the ‘301 patent is not infringed due to the existence of an implied license.^{FN10} We agree with the district court that customers who purchase pillow speakers from Curbell, MedTek, and Crest obtain an implied license to use those pillow speakers in combination with any compatible television—not just Zenith televisions. That implied license is derived from the express licenses in place between Zenith and the manufacturers.

FN10. In light of our ruling in favor of PDI on its implied license defense, we do not reach the issue of exhaustion, which was presented in PDI’s brief as “an alternative basis for this Court to affirm the district court’s finding of no infringement by PDI of claims 1-4 of the ‘301 patent.”

III.

[14] We now turn to the ‘513 patent. The district court granted PDI’s cross-motion for summary judgment that claim 1 *1363 of the ‘513 patent is invalid as anticipated by the public use of the J20525 television prior to the critical date. *Summary Judgment Order* at 13-21. In reaching that conclusion, the court focused solely on whether the J20525 television satisfied the “programmed to ignore” limitation of claim 1. The court stated: “Zenith does not specifically point to any other element of Claim 1 that it contends was not anticipated by the J20525. Therefore, this is the only element that need be considered regarding anticipation.” *Id.* at 13 (citations omitted). We do not agree.

[15] It is true that a party opposing summary judgment “must ... set out specific facts showing a genuine issue for trial.” *Fed.R.Civ.P.* 56(e)(2). However, that is only true where the movant’s

“motion for summary judgment is properly made and supported”—i.e., where the movant has otherwise established entitlement to judgment as a matter of law. *Id.* “A non-movant need not always provide affidavits or other evidence to defeat a summary judgment motion. If, for example, the movant bears the burden and its motion fails to satisfy that burden, the non-movant is ‘not required to come forward’ with opposing evidence.” *Saab Cars USA, Inc. v. United States*, 434 F.3d 1359, 1368 (Fed.Cir.2006) (citing *Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 160, 90 S.Ct. 1598, 26 L.Ed.2d 142 (1970) (citing the advisory committee’s note to Federal Rule of Civil Procedure 56(e))).

Here, PDI did not establish that it is entitled to judgment as a matter of law that claim 1 of the ‘513 patent is invalid as anticipated by the J20525 television. PDI provided no evidence whatsoever that the J20525 television satisfies the final two limitations of claim 1: “detecting said key closure with a timing circuit” and “operating key closure identification circuitry in response to said timing circuit.” Instead, with respect to those limitations, PDI merely argued that “to the extent the [allegedly infringing] PDI P20LCD is considered to practice them, then so did the RCA J20525 television.” Mem. in Supp. of PDI’s Cross-mot. for Summ. J. of Noninfringement and Invalidity at 24; *see also* Oral Arg. at 24:55-28:30, available at [http://www.cafc.uscourts.gov/oralarguments/mp 3/ 2007- 1288. mp 3](http://www.cafc.uscourts.gov/oralarguments/mp%203/2007-1288.mp3).

[16][17] Regardless of whether PDI’s statement is correct, anticipation cannot be proved by merely establishing that one “practices the prior art.” In *Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*, 279 F.3d 1357 (Fed.Cir.2002), we explained that the defense of noninfringement cannot be proved by comparing an accused product to the prior art:

Our law requires patent challengers to prove invalidity by clear and convincing evidence. Where an accused infringer is clearly practicing only that which was in the prior art, and nothing more,

and the patentee’s proffered construction reads on the accused device, meeting this burden of proof should not prove difficult. Nevertheless, accused infringers are not free to flout the requirement of proving invalidity by clear and convincing evidence by asserting a “practicing prior art” defense to literal infringement under the less stringent preponderance of the evidence standard.

Id. at 1367. Likewise, mere proof that the prior art is identical, in all material respects, to an allegedly infringing product cannot constitute clear and convincing evidence of invalidity. Anticipation requires a showing that each element of the claim at issue, properly construed, is found in a single prior art reference. “[I]t is the presence of the prior art and its relationship to the claim language that matters for invalidity.” *Id.* Here, there has been no such showing. PDI has provided no proof that the final two limitations of claim 1 are *1364 anticipated by the J20525 television. Thus, we vacate the district court’s grant of summary judgment that claim 1 of the ‘513 patent is invalid as anticipated by the J20525 television.

[18] On remand, the district court, in addition, should consider the parties’ respective arguments as to how the term “programmed to ignore” should be construed. On summary judgment, the court did not construe “programmed to ignore” by way of reference to the patent’s claims, written description, and prosecution history. Neither did the court consider the extrinsic evidence, if any, pertinent to construing the term. Rather, the court’s construction was “based upon Zenith’s theory of [infringement], as well as its *apparent* construction of Claim 1 of the ‘513 patent.” *Summary Judgment Order* at 18 (emphasis added). On appeal, Zenith argues that the district court misunderstood its actual construction of “programmed to ignore.” Zenith maintains that the J20525 television does not meet the “programmed to ignore” limitation when that term is properly construed according to the claim language and written description. In response, PDI urges a different construction based upon the claim

language and written description.

[19] Because the district court did not evaluate these claim construction arguments on summary judgment, we decline to consider them here. See *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed.Cir.2006); *Nazomi Commc'ns, Inc. v. Arm Holdings, PLC*, 403 F.3d 1364 (Fed.Cir.2005). To be sure, claim construction is a question of law that we review de novo on appeal. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed.Cir.1998) (en banc). Nonetheless, “[t]his court’s review of a district court’s claim construction ... is not an independent analysis in the first instance.” *Nazomi*, 403 F.3d at 1371. “[I]n order to perform such a review, this court must be furnished ‘sufficient findings and reasoning to permit meaningful appellate scrutiny.’” *Id.* (quoting *Gechter v. Davidson*, 116 F.3d 1454, 1458 (Fed.Cir.1997)). Here, we lack an adequate foundation upon which to weigh the parties’ respective claim construction arguments. We therefore think the best course in this case is for the district court, in the first instance, to address this claim construction issue.

On remand, the district court should construe the “programmed to ignore” limitation in accordance with the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed.Cir.2005) (en banc). Next, the court should consider the extent to which PDI has established that each limitation of claim 1 of the '513 patent was anticipated by the J20525 television, keeping in mind that PDI ultimately bears the burden of establishing invalidity by clear and convincing evidence. See *Tate*, 279 F.3d at 1367.

IV.

Next, we consider infringement of claim 1 of the '513 patent. At the end of its summary judgment order, the district court stated that PDI is entitled to “a judgment declaring that ... it has not infringed the '301 Patent or Claim 1 of the '513 patent.” *Sum-*

mary Judgment Order at 39-40; see also *Order Entering Judgment* at 1. Despite that unequivocal language, however, it appears that the district court did not actually conclude that claim 1 of the '513 patent is not infringed. Nowhere in its *Summary Judgment Order* did the court make findings that could form the basis for a summary judgment of noninfringement with respect to claim 1 of the '513 patent. The only noninfringement arguments addressed by the district court related to PDI’s implied license and exhaustion defenses. The district court *1365 evaluated those defenses under the heading of “II. INFRINGEMENT OF THE '301 PATENT CLAIMS 1-4 AFFIRMATIVE DEFENSES.” *Summary Judgment Order* at 21. Further, the district court discussed only the '301 patent in its analysis of those defenses. After concluding that PDI had proven the existence of an implied license, the court stated:

PDI is entitled to summary judgment dismissing, in its entirety, Zenith’s claim that PDI infringed the '301 Patent. PDI is also entitled to summary judgment declaring that it did not infringe the '301 Patent. Since *unresolved issues may remain as to claims of the '513 Patent*, no judgment will be entered at this time.

Id. at 35 (emphasis added). Indeed, PDI did not even argue in its cross-motion for summary judgment that the implied license defense extended to its alleged infringement of the '513 patent. For these reasons, we think that the district court did not, in fact, grant summary judgment that claim 1 of the '513 patent is not infringed. It seems more likely that the court intended to state that Zenith’s allegation of infringement with respect to claim 1 of the '513 patent was dismissed in light of the court’s ruling that claim 1 is invalid. See *id.* at 21 (“Since the Claim is invalid, PDI is also entitled to summary judgment dismissing Zenith’s claim that PDI infringed Claim 1 of the '513 Patent.”).

[20] In any event, PDI’s implied license defense is inapplicable to infringement under the '513 patent for two reasons. First, the express license agree-

ments between Zenith and Curbell, MedTek, and Crest do not extend to the '513 patent. As discussed above, the agreements only authorize the manufacturers to "make, have made, use, sell or otherwise dispose of" any pillow speaker unit "the manufacture, use or sale of which pillow speaker unit is covered by the ['301 patent]." There is no similar grant of rights with respect to the '513 patent. Consequently, no implied license to practice the '513 patent may be derived from the express license agreements between Zenith and Curbell, MedTek, and Crest.

Nor is a license under the '513 patent implied by the mere purchase of pillow speakers from those manufacturers. The '513 patent is directed solely at the television side of the television/pillow speaker interface. The invention claimed in the '513 patent enables televisions to receive and execute two types of control signals: digital control signals ("data pulses") and analog control signals ("key closures"). Televisions incorporating the invention are thus compatible with both newer digital pillow speakers-e.g., the improved pillow speakers described and claimed in the '301 patent-and older analog pillow speakers. All of the claims of the '513 patent are directed at making televisions compatible with both digital and analog pillow speakers.

With that in mind, the reason that the mere purchase of digital pillow speakers from Curbell, MedTek, and Crest does not result in an implied license under the '513 patent becomes apparent: those pillow speakers have non-infringing uses. Specifically, the use of digital pillow speakers purchased from Curbell, MedTek, and Crest, in combination with televisions that are not capable of receiving analog control signals, would not infringe the '513 patent, under which televisions are required to have both digital and analog capability. The mere sale of the digital pillow speakers does not imply a license for their use with televisions that have the additional features claimed in the '513 patent, as those features are unrelated to the digital pillow speakers themselves. The digital *1366 pil-

low speakers are suitable for use with any television that is capable of receiving the *digital* control signals that they transmit, irrespective of whether the television is also capable of receiving *analog* control signals.

For these reasons, we conclude that PDI is not entitled to the implied license defense with respect to infringement of the '513 patent. To the extent that the district court granted summary judgment that claim 1 of the '513 patent is not infringed-which, as noted, we do not think is the case-we vacate that ruling.

V.

Next, we address the issues that PDI has presented in its cross-appeal. First, PDI cross-appeals the district court's rulings with respect to inequitable conduct. PDI's inequitable conduct contentions were based upon Zenith's failure to disclose the J20525 television to the Patent and Trademark Office ("PTO") during prosecution of the '301 and '513 patents. *Summary Judgment Order* at 36. The district court dismissed without prejudice PDI's counterclaim of inequitable conduct with respect to the '301 patent and claim 1 of the '513 patent as moot in light of its findings that those claims are invalid. *Id.* at 37. The district court dismissed with prejudice PDI's counterclaim of inequitable conduct with respect to claims 2-8 of the '513 patent, finding that PDI had failed to argue that the J20525 television was material to those claims. *Id.*

On appeal, PDI asserts that its inequitable conduct counterclaim does not become moot simply because certain claims in the '301 and '513 patents were found invalid and/or not infringed. To the contrary, PDI asserts that it has an ongoing interest in pursuing the inequitable conduct counterclaims, since (1) it will be seeking a finding that this case is exceptional and that an award of attorneys' fees under 35 U.S.C. § 285 is warranted and (2) it may not be entitled to the implied license defense in the future should Zenith terminate its license agreements with

Curbell, MedTek, and Crest. Further, PDI argues that the district court erred in dismissing its inequitable conduct counterclaim with respect to claims 2-8 of the '513 patent. PDI contends that it did present evidence of materiality with respect to claim 1, and it is well established that inequitable conduct with respect to one claim of a patent renders the entire patent unenforceable.

Zenith responds that the district court properly dismissed all of PDI's counterclaims for inequitable conduct. Zenith argues that our decision in *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371 (Fed.Cir.2007), precludes PDI from continuing to pursue inequitable conduct with respect to claims that have been held invalid. Further, Zenith maintains that the district court correctly dismissed inequitable conduct with respect to claims 2-8 of the '513 patent because PDI failed to offer any evidence that the J20525 television was material to the prosecution of those claims.

[21][22] Turning to the '301 patent first, we affirm the district court's determinations on summary judgment (1) that claim 1 of the '301 patent is invalid as anticipated and (2) that the '301 patent is not infringed due to the existence of an implied license. However, we do not agree with the district court's conclusion that those rulings moot PDI's counterclaim of inequitable conduct with respect to the '301 patent. It is clear that a finding of non-infringement does not moot a counterclaim for inequitable conduct. *Fort James Corp. v. Solo Cup Co.*, 412 F.3d 1340, 1348 (Fed.Cir.2005) (“[A] counterclaim questioning ... enforceability of a patent raises issues beyond the initial claim for infringement that are not disposed of by a decision of non-infringement.”(citations omitted)). *1367 We therefore reinstate PDI's counterclaim of inequitable conduct with respect to the '301 patent. On remand, PDI may challenge Zenith's prosecution conduct with respect to all of the claims of the '301 patent. PDI may specifically pursue inequitable conduct with respect to claim 1, which has been held invalid, because such a finding would additionally

render unenforceable asserted claims 2-4, which have not been held invalid.^{FN11}

FN11. This case is unlike *Liebel-Flarsheim*, where we concluded that the defendant Medrad's counterclaim for inequitable conduct was moot in view of, inter alia, our determination that *all* of the asserted claims were invalid. 481 F.3d at 1383. In that setting, Medrad admitted that a ruling of unenforceability with respect to the entire patent was not meaningful at the time. Here, asserted claims 2-4 of the '301 patent have not been held invalid.

[23][24] As discussed above, we vacate the district court's determinations on summary judgment that claim 1 of the '513 patent is (1) invalid as anticipated and (2) not infringed. We therefore reinstate PDI's counterclaim of inequitable conduct with respect to claim 1 of the '513 patent. Nonetheless, we affirm the district court's dismissal with prejudice of PDI's counterclaims of inequitable conduct with respect to claims 2-8 of the '513 patent. PDI is correct that “when inequitable conduct occurs in relation to one claim the entire patent is unenforceable.” *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 874 (Fed.Cir.1988). However, that does not excuse PDI's failure to introduce evidence that the J20525 television is material to the limitations recited in claims 2-8 of the '513 patent. PDI remains free to pursue inequitable conduct with respect to claim 1 of the '513 patent, which, if established, would additionally render claims 2-8 unenforceable. However, PDI is precluded from seeking to prove inequitable conduct with respect to claims 2-8 themselves.

Finally, PDI cross-appeals the district court's denial of its motion for costs. PDI contends that the district court improperly denied its motion for costs without explanation, contrary to *Krocka v. City of Chicago*, 203 F.3d 507 (7th Cir.2000). Further, PDI argues that it was clearly entitled to recover costs as the prevailing party because its “win may be perceived as more substantial than that of the

plaintiff.” *Id.* On appeal, we vacate and remand a number of the district court’s summary judgment rulings; we are therefore in no position to opine on whether PDI should ultimately be deemed the prevailing party for purposes of recovering costs. We agree with PDI, however, that Seventh Circuit law requires the district court to provide some explanation of its decision regarding costs. *See id.* at 518 (remanding the case to the district court for “an explanation of the sound legal reasons supporting” its allocation of costs). PDI may again move for costs, if appropriate, following the district court’s resolution of the remaining issues on remand. The district court’s conclusion on that issue should be accompanied by an explanation in accordance with *Krocka*.

CONCLUSION

For the foregoing reasons, we affirm the district court’s (1) grant of summary judgment of invalidity of claim 1 of the ‘301 patent; (2) grant of summary judgment of noninfringement of the ‘301 patent; and (3) dismissal with prejudice of PDI’s counterclaim of inequitable conduct with respect to claims 2-8 of the ‘513 patent. However, we vacate the district court’s (1) grant of summary judgment of invalidity of claim 1 of the ‘513 patent; (2) grant of summary judgment of noninfringement of claim 1 of the ‘513 patent; (3) dismissal *1368 without prejudice of PDI’s counterclaim of inequitable conduct with respect to the ‘301 patent and claim 1 of the ‘513 patent; and (4) denial of PDI’s motion for costs. As far as these matters are concerned, we remand the case to the district court for further proceedings.

AFFIRMED-IN-PART, VACATED-IN-PART, and REMANDED

COSTS

No costs.

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